

Name _____

TWOFACOR CROSS PRACTICE PROBLEMS

In mice, the ability to run normally is a dominant trait. Mice with this trait are called running mice. The recessive trait causes mice to run in circles only. Mice with this trait are called waltzing mice. Hair color is also inherited in mice.

- Running (R) is dominant over waltzing (r)
- Black hair (B) is dominant over brown hair (b)

For each of the following problems

- Write the genotypes of the parents and determine the possible gametes
- Draw a Punnett square in the space provided to show your work
- Determine the phenotypic ratio of the offspring
- Determine the probability that the offspring would have the indicated phenotypes

1. Cross a heterozygous running, heterozygous black mouse
with a homozygous running, homozygous black mouse

♂ _____ x _____ ♀

Phenotypic ratio:

Probability offspring is
running AND black: _____

waltzing AND brown: _____

2. Cross a homozygous running, homozygous black mouse
with a heterozygous running, brown mouse

♂ _____ x _____ ♀

Phenotypic ratio:

Probability offspring is
running AND black: _____

waltzing AND brown: _____

3. Cross a heterozygous running, heterozygous black mouse
with a heterozygous running, heterozygous black mouse

♂ _____ x _____ ♀

Phenotypic ratio:

Probability offspring is
waltzing AND black: _____

waltzing AND brown: _____

4. Cross a homozygous running, heterozygous black mouse
with a waltzing brown mouse

♂ _____ x _____ ♀

Phenotypic ratio:

Probability offspring is
running AND black: _____

running AND brown: _____

5. Cross a heterozygous running, brown mouse
with a heterozygous running, homozygous black mouse

♂ _____ x _____ ♀

Phenotypic ratio:

Probability offspring is
running AND black: _____

waltzing AND black: _____

6. Cross a waltzing brown mouse with a waltzing brown mouse

♂ _____ x _____ ♀

Phenotypic ratio:

Probability offspring is
waltzing AND black: _____

waltzing AND brown: _____

7. Cross a heterozygous running, homozygous black mouse
with a waltzing brown mouse

♂ _____ x _____ ♀

Phenotypic ratio:

Probability offspring is
running AND black: _____

waltzing AND black: _____

8. Cross a homozygous running, heterozygous black mouse
with a waltzing, heterozygous black mouse

♂ _____ x _____ ♀

Phenotypic ratio:

Probability offspring is
running AND black: _____

running AND brown: _____
